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EXAMINER

NGUYEN, TOAN D

ART UNIT

PAPER NUMBER

2665

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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/589,464

Applicant(s)

BOODAGHIAN, SAMSON

Examiner

Toan D Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 June 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-79 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 6-11, 13-38, 42, 45-49, 52, 55, 60-70 and 74-79 is/are rejected.
- 7) ☒ Claim(s) 5, 12, 39-41, 43, 44, 50, 51, 53, 54, 56-59 and 71-73 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 35-37, 42 and 45 are rejected under 35 U.S.C. 102(a) as being anticipated by Nagami et al. (VCID Notification Over ATM link for LDP, July 1999, MPLS Working Group, Internet Draft).

For claims 35 and 42, Nagami et al. disclose VCID notification over ATM link for LDP comprising steps of:

receiving a packet travelling downstream on a bi-directional traffic trunk (page 3 lines 24-26 and page 4 lines 31-37); and

transmitting the received packet upstream on the bi-directional traffic trunk (page 3 lines 24-26 and page 4 lines 31-37).

For claim 36, Nagami et al. disclose identifying the incoming label of the received packet (page 4 lines 5-6).

For claim 37, Nagami et al. disclose replacing the identified incoming label with an incoming label corresponding to a received packet travelling upstream on the bi-directional traffic trunk (page 5 lines 2-3).

For claim 45, Nagami et al. disclose wherein the bi-directional traffic trunk is in a multi-protocol label switching network (page 1 line 36).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 6-11, 13-34, 55, 60-70 and 74-79 are rejected under 35 U.S.C. 103(a) as being unpatentable over Theimer et al. (Requirements for OAM Functionality in MPLS, October 1999, Internet-Draft) in view of Nagami et al. (VCID Notification Over ATM link for LDP, July 1999, MPLS Working Group, Internet Draft).

For claims 1-2, 7-9, 11, 13-15, 17-20 and 23-29, Theimer et al. disclose requirements for OAM functionality in MPLS comprising:

performing a loopback function on the established bi-directional traffic trunk (page 3 line 35 to page 4 line 4).

However, Theimer et al. do not disclose establishing a bi-directional traffic trunk. In an analogous art, Nagami et al. disclose establishing a bi-directional traffic trunk (page 3 lines 24-26). Nagami et al. disclose further evaluating at least one parameter of the established bi-directional traffic trunk using the performed loopback function (page 3 lines 25-26 as set forth in claims 2, 17 and 23-24); activating the established bi-directional traffic trunk, when the evaluated parameter is any one of: (1) equivalent to a predetermined standard associated with the evaluated parameter and (2) exceeds the predetermined standard associated with the evaluated parameter (page 4 lines 13-16 as set forth in claims 3, 26 and 28); performing at least one of: (1) re-establishing the bi-directional traffic trunk using a different explicit route and (2) providing

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notification, when the evaluated parameter is not equivalent to, and does not exceed the predetermined standard (page 4 lines 13-30 as set forth in claim 4); performing the loopback function for the activated bi-directional traffic trunk; and evaluating at least one parameter for the activated bi-directional traffic trunk using the performed loopback function (page 3 lines 25-26 as set forth in claim 7); wherein the loopback function for the activated bi-directional traffic trunk is performed periodically, and the evaluated parameter for the activated bidirectional traffic trunk is evaluated periodically (page 3 line 35 to page 4 line 4 as set forth in claims 8 and 18); performing at least one of: (1) re-establishing the bi-directional traffic trunk using a different explicit route and (2) providing notification, when the evaluated parameter for the activated bi-directional trunk is not equivalent to, and does not exceed a predetermined standard associated with the evaluated standard (page 4 lines 13-30 as set forth in claims 9, 19, 25 and 29); selecting a label switching router in a path traversed by the bi-directional traffic trunk; and activating a loopback procedure at the label switching router (page 6 lines 32-33 as set forth in claim 11); transmitting an out-of-band command to the label-switching router instructing the label switching router to activate the loopback procedure (page 6 lines 32-33 as set forth in claim 13); wherein the evaluated parameter is evaluated for at least one portion of the established bi-directional traffic trunk (page 3 lines 24-26 as set forth in claims 14 and 27); wherein the bi-directional traffic trunk is established in a multi protocol label switching network (page 1 line 34 as set forth in claims 15 and 20).

One skilled in the art would have recognized a bi-directional traffic trunk to use the teachings of Nagami et al. in the system of Theimer et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time invention, to use the bi-directional traffic trunk as

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taught by Nagami et al. in Theimer et al.'s with the motivation being to two VCID procedures (page 3 lines 25-26).

For claim 6, Theimer et al. disclose wherein the evaluated parameter includes at least one of connectivity and delay (page 2 lines 29-30).

For claim 10, Theimer et al. disclose wherein the parameter evaluated for the activated bi-directional traffic trunk includes at least one of connectivity and delay (page 2 lines 29-30).

For claim 16, Theimer et al. disclose requirements for OAM functionality in MPLS comprising:

performing a loopback function on the activated bi-directional traffic trunk (page 3 line 35 to page 4 line 4).

However, Theimer et al. do not disclose activating a bi-directional traffic trunk. In an analogous art, Nagami et al. disclose activating a bi-directional traffic trunk (page 3 lines 24-26). One skilled in the art would have recognized a bi-directional traffic trunk to use the teachings of Nagami et al. in the system of Theimer et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time invention, to use the bi-directional traffic trunk as taught by Nagami et al. in Theimer et al.'s with the motivation being to two VCID procedures (page 3 lines 25-26).

For claim 21, Theimer et al. disclose wherein the at least one parameter includes at least one of connectivity, delay and other quality of service parameters (page 2 lines 29-30).

For claims 22 and 31-34, Theimer et al. disclose requirements for OAM functionality in MPLS comprising:

a loopback router configured to receive the packet and transmit the packet upstream towards the originating router on the bi-directional traffic trunk (page 3 line 35 to page 4 line 4).

However, Theimer et al. do not disclose an originating router configured to transmit a packet downstream on a bidirectional traffic trunk. In an analogous art, Nagami et al. disclose an originating router configured to transmit a packet downstream on a bidirectional traffic trunk (page 3 lines 24-26 and page 4 lines 31-37). Nagami et al. disclose further wherein the packet is an in-band network management packet (as set forth in claim 33); wherein the bi-directional traffic trunk is in a multi-protocol label switching network (page 1 line 34 as set forth in claim 34).

One skilled in the art would have recognized a bi-directional traffic trunk to use the teachings of Nagami et al. in the system of Theimer et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time invention, to use the bi-directional traffic trunk as taught by Nagami et al. in Theimer et al.'s with the motivation being to two VCID procedures (page 3 lines 25-26).

For claim 30, Theimer et al. disclose wherein the at least one parameter includes at least one of connectivity and delay (page 2 lines 29-30).

For claims 55, 60-62 and 67-68, Theimer et al. disclose requirements for OAM functionality in MPLS comprising:

determining whether to perform a loopback procedure at the router receiving the packet (page 3 line 35 to page 4 line 4).

However, Theimer et al. do not disclose transmitting the packet downstream on a bi-directional traffic trunk from the router constructing the packet; receiving the packet at a

router; and constructing a packet at a router. In an analogous art, Nagami et al. disclose transmitting the packet downstream on a bi-directional traffic trunk from the router constructing the packet; receiving the packet at a router; and constructing a packet at a router (page 3 lines 24-26). Nagami et al. disclose further wherein the router constructing the packet and the router receiving the packet are label switching routers (page 6 line 33 as set forth in claims 60-61).

One skilled in the art would have recognized a bi-directional traffic trunk to use the teachings of Nagami et al. in the system of Theimer et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time invention, to use the bi-directional traffic trunk as taught by Nagami et al. in Theimer et al.'s with the motivation being to two VCID procedures (page 3 lines 25-26).

For claim 63, Theimer et al. disclose wherein the step of determining whether to perform a loopback procedure further includes a step of determining whether the received packet is a loopback packet (page 3 line 35 to page 4 line 4).

For claims 64-66, Theimer et al. disclose wherein the step of determining whether to perform a loopback procedure further includes a step of determining whether the router receiving the packet is a loopback router for the received packet (page 3 line 35 to page 4 line 4).

For claims 69 and 75-79, Theimer et al. disclose requirements for OAM functionality in MPLS comprising:

a receiving router receiving the packet and determining whether the receiving router is a loopback router for the received packet (page 3 line 35 to page 4 line 4).

However, Theimer et al. do not disclose a bi-directional traffic trunk; an originating router constructing a packet and transmitting a packet downstream on the bi-directional traffic trunk. In



an analogous art, Nagami et al. disclose a bi-directional traffic trunk; an originating router constructing a packet and transmitting a packet downstream on the bi-directional traffic trunk (page 3 lines 24-26); wherein the packet is an in-band network management packet (page 4 line 32 to page 5 line 39 as set forth in claim 79). One skilled in the art would have recognized a bi-directional traffic trunk to use the teachings of Nagami et al. in the system of Theimer et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time invention, to use the bi-directional traffic trunk as taught by Nagami et al. in Theimer et al.'s with the motivation being to two VCID procedures (page 3 lines 25-26).

For claim 70, Theimer et al. disclose wherein the receiving router performs a loopback procedure when the receiving router is the loopback router for the received packet (page 3 line 35 to page 4 line 4).

For claim 74, Theimer et al. disclose wherein the receiving router transmits the received packet to a next hop upstream, towards the originating router, when the receiving router is the loopback router for the received packet (page 3 line 35 to page 4 line 4).

5. Claims 38, 46-49 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nagami et al. (VCID Notification Over ATM link for LDP, July 1999, MPLS Working Group, Internet Draft) in view of Callon et al. (A Framework for Multiprotocol label Switching, IETF Draft, September 1999).

For claim 38, Nagami et al. do not disclose maintaining a table of next hop label forwarding entries; and determining the received packet's next hop using a next hop label forwarding entry associated with the replaced incoming label. In an analogous art, Call et al. disclose maintaining a table of next hop label forwarding entries; and determining the received

packet's next hop using a next hop label forwarding entry associated with the replaced incoming label (page 47 line 33 to page 48 line 18).

One skilled in the art would have recognized a table of next hop label forwarding entries to use the teachings of Callon et al. in the system of Nagami et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time invention, to use the table of next hop label forwarding entries as taught by Callon et al. in Nagami et al.'s system with the motivation being to provide the label switch the packets being received from the short cut VC that need to be informed as to exactly what traffic will arrive on that VC and that mapping can not change without notice (page 48 lines 7-10).

For claims 46 and 48-49, Nagami et al. disclose VCID notification over ATM link for LDP comprising steps of:

a plurality of ports, one port of the plurality of ports receiving a packet travelling downstream on a bi-directional traffic trunk (page 3 lines 24-26 and page 4 lines 31-37); and processing circuitry processing the packet and forwarding the packet to a selected port of the plurality of ports for transmission to a next hop upstream on the bi-directional traffic trunk (page 3 lines 24-26 and page 4 lines 31-37).

However, Nagami et al. do not disclose a plurality of ports. In an analogous art, Callon et al. disclose a plurality of ports (page 19 lines 30-36). Callon et al disclose further wherein the processing circuitry includes a memory that stores routing information, and the processing circuitry determines the next hop upstream using the stored routing information associated with the replaced label (page 18 lines 15-40 as set forth in claims 48-49).

One skilled in the art would have recognized a plurality of ports to use the teachings of Callon et al. in the system of Nagami et al. Therefore, it would have been obvious to one of ordinary skill in the art at the time invention, to use the plurality of ports as taught by Callon et al. in Nagami et al.'s system with the motivation being to provide the same TCP/UDP source/destination ports (page 19 lines 31-32).

For claim 47, Nagami et al. disclose wherein the processing circuitry identifies an incoming label for the received packet and replaces the identified incoming label with an incoming label corresponding to a received packet travelling upstream on the bi-directional traffic trunk (page 4 lines 5-6 and page 5 lines 2-3).

For claim 52, Nagami et al. disclose wherein the router is a label switching router in a multi-protocol label switching network (page 1 line 36).

***Allowable Subject Matter***

6. Claims 5, 12, 39-41, 43-44, 50-51, 53-54, 56-59 and 71-73 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Contact Information***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan D Nguyen whose telephone number is 703-305-0140. The examiner can normally be reached on Monday- Friday (7:00AM-4:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Huy Vu can be reached on 703-308-6602. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Any inquiry of a general nature or relating to the status of this application or proceeding  
should be directed to the receptionist whose telephone number is 703-305-9600.

TN  
T.N.



ALPUS H. HSU  
PRIMARY EXAMINER